DEL RIO ESTATES (PWS 5160014)
SOURCE WATER ASSESSMENT FINAL REPORT

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State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area, sensitivity factors associated with the wells, and aquifer characteristics.

This report, *Source Water Assessment for the Del Rio Estates, Burley, Idaho* describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The Del Rio Estates drinking water system (PWS 5160014) consists of one ground water well source. The well has an overall rating of moderate susceptibility to all contaminants predominantly due to a low hydrologic sensitivity score offsetting the numerous potential contaminants and high agricultural land uses.

The only inorganic contaminants (IOCs) detected in the sampled water have been arsenic, barium, fluoride, and nitrate. Nitrate levels remain at background levels, which have been consistently below 1.4 milligrams per liter (mg/L). The Maximum Contaminant Level (MCL) for nitrate is 10 mg/L. Total coliform bacteria have been detected in the distribution system in 1993 and 1998, but there has never been a repeat detection at the wellhead. No volatile organic contaminants (VOCs) or synthetic organic contaminants (SOCs) have been detected in the well.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the Del Rio Estates, source water protection activities should first focus on correcting deficiencies outlined in the Drinking Water Supply Report (DEQ, 2001), if any still exist. The Del Rio Estates should implement a disinfection system if microbial contamination becomes an issue. Any spills from the potential contaminant sources listed in Table 1 should be carefully monitored, as should any future development in the delineated areas. Other practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the designated source water areas should be implemented. Most of the designated areas are outside the direct jurisdiction of the Del Rio Estates. Partnerships with state and local agencies and industry groups should be established and are critical to success.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan, because the delineation shows areas of urban and agricultural land use. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the U.S. Environmental Protection Agency. Many transportation corridors transect the delineation. Therefore, the Department of Transportation should be included in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A community with a fully developed drinking water protection program will incorporate many strategies, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Twin Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR THE DEL RIO ESTATES, BURLEY, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings, used to develop this assessment, is also attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of this assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The Del Rio Estates well is a community well that serves approximately 46 people through approximately 20 connections. The well is located in Cassia County, east of the City of Burley, along State Highway 81 (Figure 1).

The main IOC water chemistry issue recorded in the public water system is arsenic, though the recorded levels (4 to 9 parts per billion) are background readings. The new MCL listed by EPA is 10 ppb. Del Rio Estates may have to install a treatment system by 2006. Total coliform bacteria have been detected in the distribution system in June 1993 and October 1998, but there has never been a repeat detection at the wellhead. No VOCs or SOCs were detected in the well.

County level nitrogen fertilizer use, county level herbicide use, and total county level ag-chemical use are rated as high for the area. In addition, the delineations fall within a nitrate priority area and an SOC priority area for the pesticide Atrazine.

Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ used a refined computer model approved by the EPA in determining the time-of-travel (TOT) zones for water associated with the Goose Creek – Golden Valley and Eastern Snake River Plain (ESRP) aquifers in the vicinity of the Del Rio Estates. The computer model used site-specific data, assimilated by DEQ from a variety of sources, including local area well logs and hydrogeologic reports summarized below.

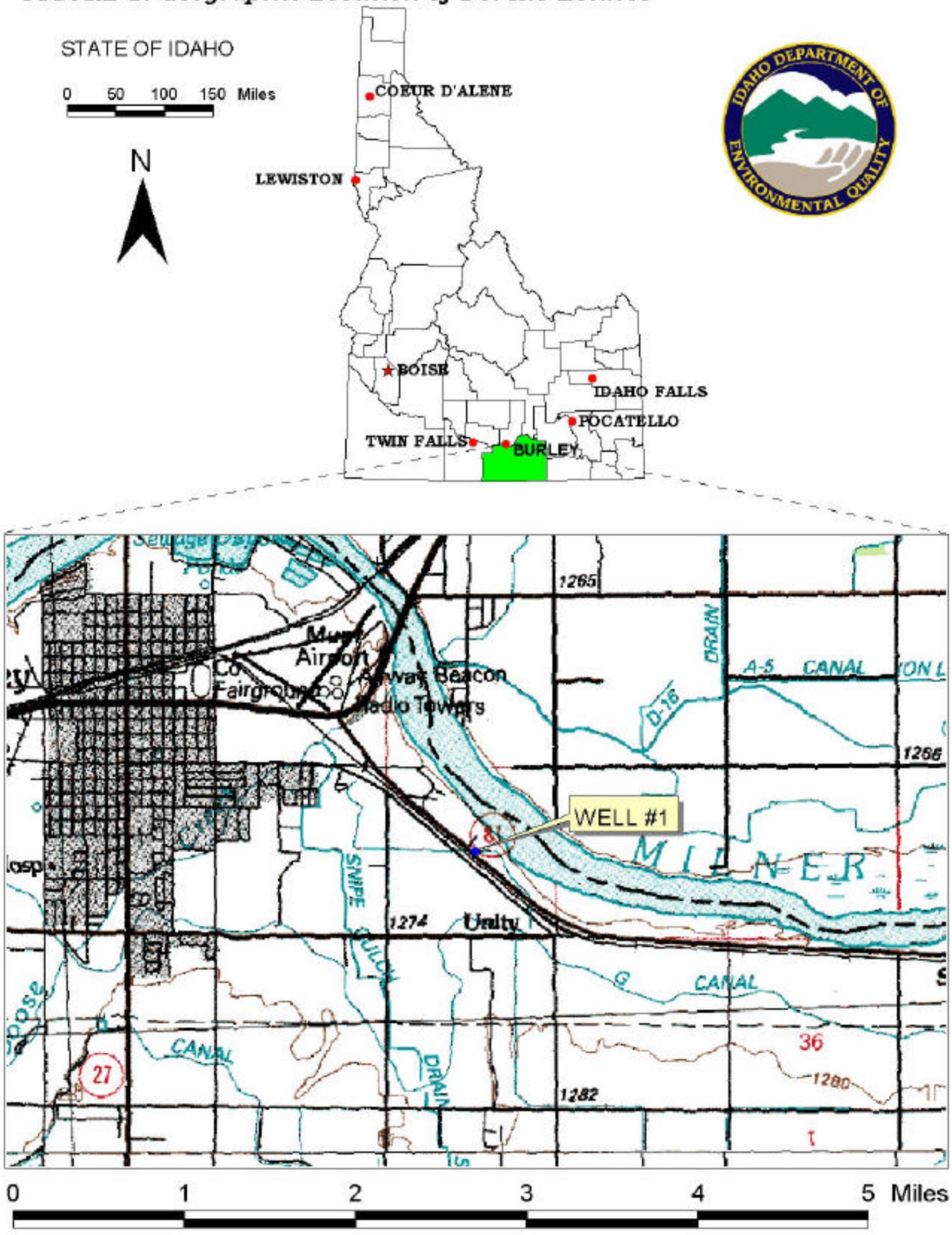
Goose Creek – Golden Valley aquifer

The well extracts water from basalt of the Snake River Group to the northeast, east, and possibly the Idavada Volcanics to the south. The Snake River Group consists of basalt flows with thicknesses ranging from a few to several tens of feet. Contacts between the flows, and in rubbly zones are the best water producers. The basalt overlies the Idavada Volcanics.

The Idavada Volcanics unit, locally referred to as rhyolite, consists of welded ash and tuff, rhyolite, and some basalt flows. The flows are dense and are commonly reddish-brown, gray, or black. The tuff and ash beds are fine to coarse grained, light colored, and commonly water laden (Crosthwaite, 1969).

Twenty-four years of records since 1964 set the average yearly rainfall in Burley at 8.6 inches (Crosthwaite, 1969). The Albion Range with the fault zone at its base bound the plain on the southeast, and the Rock Creek Hills bound the plain on the southwest. The lowland slopes northward from an elevation of about 4,600 feet at Oakley to 4,150 feet at Burley (Crosthwaite, 1969).

FIGURE 1. Geographic Location of Del Rio Estates



The regional Snake River Group basalts to the east and northeast mainly influenced the Del Rio Estates delineation modeling. However, there was also a southerly component of the flow from the fault zone along the Albion Range. Previous modeling (Garabedian, 1992) in the area was used as a guide in the delineation process.

SW ESRP aquifer

The ESRP is a northeast trending basin located in southeastern Idaho. The 10,000 square miles of the plain are filled primarily with highly fractured layered Quaternary basalt flows of the Snake River Group, which are intercalated with sedimentary rocks along the margins (Garabedian, 1992, p. 5). Individual basalt flows range from 10 to 50 feet thick, averaging 20 to 25 feet thick (Lindholm, 1996, p. 14). Basalt is thickest in the central part of the eastern plain and thins toward the margins. Whitehead (1992, p. 9) estimates the total thickness of the flows to be as great as 5,000 feet. A thin layer (0 to 100 feet) of windblown and fluvial sediments overlies the basalt.

The layered basalts of the Snake River Group host one of the most productive aquifers in the United States. The aquifer is generally considered unconfined, yet may be confined locally because of interbedded clay and dense unfractured basalt (Whitehead, 1992, p. 26). Whitehead (1992, p. 22) reports that well yields of 2,000 to 3,000 gal/min are common for wells open to less than 100 feet of the aquifer. Lindholm (1996, p. 18) estimates aquifer thickness to range from 100 feet near the plain's margin to thousands of feet near the center. Models of the regional aquifer have used values ranging from 200 to 3,000 feet to represent aquifer thickness (Cosgrove et al., 1999, p. 15).

Regional ground-water flow is to the southwest paralleling the basin (Cosgrove et al., 1999; deSonneville, 1972, p. 78; Garabedian, 1992, p. 48; and Lindholm, 1996, p. 23). Reported water table gradients range from 3 to 100 ft/mile and average 12 ft/mile (Lindholm, 1996, p. 22). Gradients steepen at the plain's margin and at discharge locations.

The majority of aquifer recharge results from surface water irrigation activities (incidental recharge), which divert water from the Snake River and its tributaries (Ackerman, 1995, p. 4, and Garabedian, 1992, p. 11). Natural recharge occurs through stream losses, direct precipitation, and tributary basin underflow.

The Southwest Margin of the ESRP hydrologic province is the regional aquifer's primary discharge area. Interpretation of well logs indicates that a 1- to 23-foot-thick layer of sediment overlies the fractured basalt aquifer in Jerome County, and that an 8- to 410-foot-thick layer of sediment overlies the same aquifer in southern Minidoka and Power Counties. Published geologic maps of the Snake River Plain (Whitehead 1992, Plates 1 and 5) indicate there is 100 to 500 feet of Quaternary to Tertiary basalts aged and compacted to poorly consolidated sediments located in the Heyburn area (north of the Snake River near Burley). The saturated thickness of the regional basalt aquifer for the Southwest Margin is estimated to range from less than 500 feet near the Snake River to 1,500 feet near Minidoka.

A published water table map of the Kimberly to Bliss region of the aquifer (Moreland, 1976, p. 5) indicates that the ground-water flow direction in the Southwest Margin is similar to that depicted at the regional scale (e.g., Garabedian, 1992, Plate 4).

Annual average precipitation for the period 1951 to 1980 is 9.6 inches in both Twin Falls and Burley (Kjelstrom, 1995, p. 3). The estimated recharge from precipitation in the Southwest Margin ranges from less than 0.5 inch to more than 2 in./yr (Garabedian, 1992, p. 20). Kjelstrom (1995, p. 13) reports an annual river loss of 110,000 acre-feet to the aquifer for the 34.8-mile Minidoka-to-Milner reach of the Snake River. River gains of 210,000 acre-feet for the 21.5-mile Milner-to-Kimberly reach, and 880,000 acre-feet for the 20.4-mile Kimberly-to-Buhl reach are reported for the same period.

The Del Rio Estates well is in close proximity to the Snake River. The river is the dividing line for the two aquifers, therefore, the source water for the well comes from both described aquifers. The delineated source water assessment area for the Del Rio Estates well can best be described as a pie slice extending east of the well, with a width of 4.5 miles at the end and a length of about 6 miles (Figure 2). The data used by DEQ in determining the source water assessment delineation areas are available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product, or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and the Del Rio Estates and from available databases.

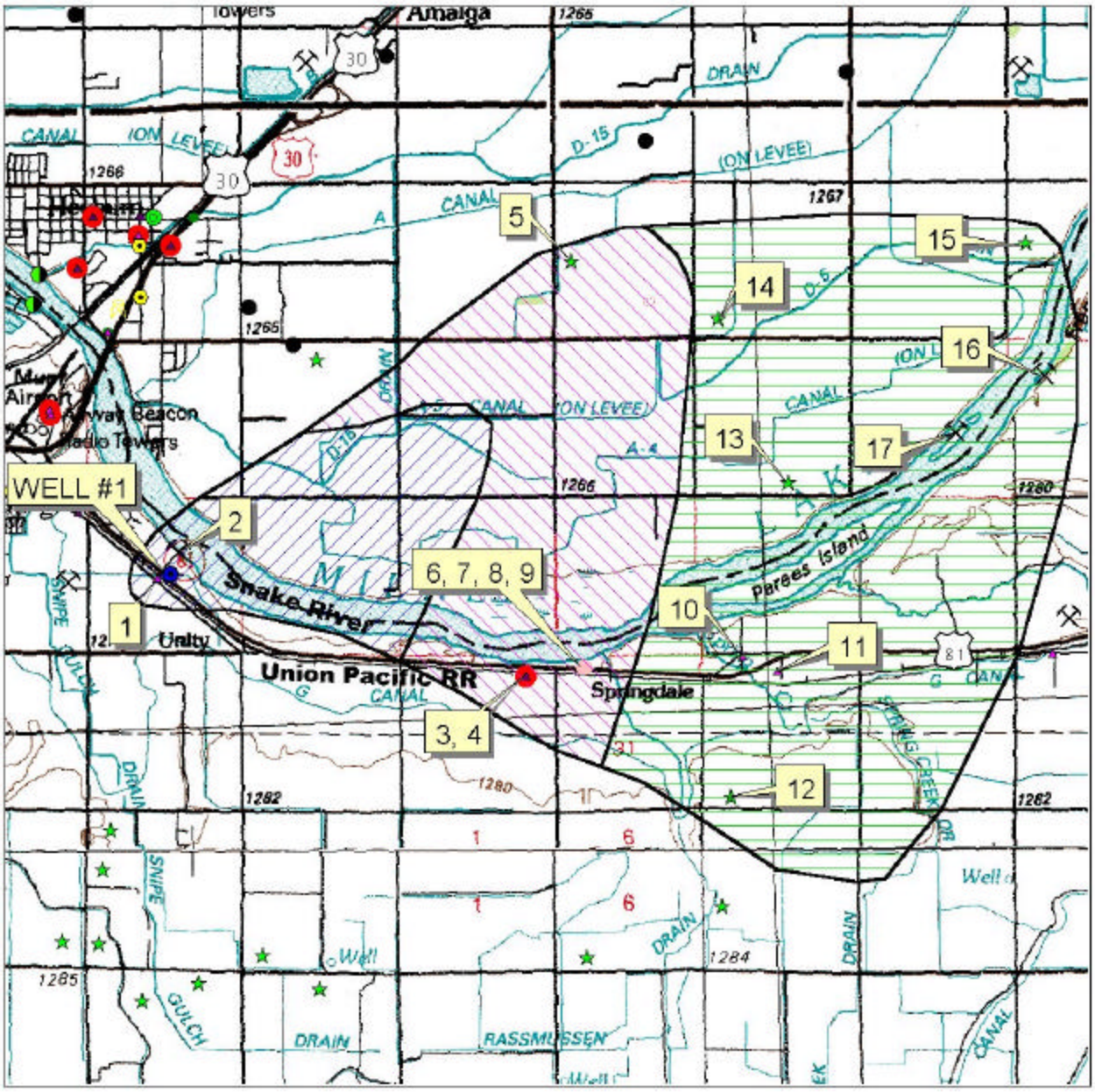
The dominant land use outside the Del Rio Estates area is irrigated agriculture. Land use within the immediate area of the wellheads consists of residential property, commercial and light industrial properties, and agriculture. State Highway 81 and the Eastern Idaho Railroad are major transportation corridors in the area. The Snake River also transects the area(Table 2).

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both, to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A contaminant inventory of the study area was conducted in July and August of 2001. This involved identifying and documenting potential contaminant sources within the Del Rio Estates Source Water Assessment Areas through the use of computer databases and Geographic Information System maps developed by DEQ. William Parsons, the Del Rio Estates Water Operator, confirmed this information.

Figure 2. Del Rio Estates Delineation Map and Potential Contaminant Source Locations



The delineation (Table 1, Figure 2) has 17 potential point sources. These potential contaminant sources include a leaking underground storage tank (LUST) site, underground storage tank (UST) sites, commercial, industrial, and municipal businesses, gold placer deposits, multiple dairies, and above ground storage tank (AST) sites. Additionally, there are sites regulated by the Superfund Amendments and Reauthorization Act (SARA). State Highway 81, the Eastern Idaho Railroad, and the Snake River are major sources that cross the delineations. If an accidental spill occurred in any of these sources, IOCs, VOCs, SOCs, or microbial contaminants could be added to one or both of the aquifer systems.

Table 1. Del Rio Estates, Potential Contaminant Inventory

Site #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	UST – open	0-3	Database Search	VOC, SOC
2	Gold mine	0-3	Database Search	IOC, VOC, SOC
3, 4	LUST - Site Cleanup Incomplete , Impact: GROUND WATER, UST - closed	3-6	Database Search	VOC, SOC
5	Dairy <=200 cows	3-6	Database Search	IOC
6, 8	SARA site, AST	3-6	Database Search	VOC, SOC
7, 9	SARA site, AST	3-6	Database Search	VOC, SOC
10	UST – open	6-10	Database Search	IOC, VOC, SOC
11	UST – open	6-10	Database Search	IOC, VOC, SOC
12	Dairy <=200 cows	6-10	Database Search	IOC
13	Dairy <=200 cows	6-10	Database Search	IOC
14	Dairy <=200 cows	6-10	Database Search	IOC
15	Dairy <=200 cows	6-10	Database Search	IOC
16	Gold mine	6-10	Database Search	IOC, VOC, SOC
17	Gold mine	6-10	Database Search	IOC
	State Highway 81	0-10	GIS Map	IOC, VOC, SOC, Microbes
	Eastern Idaho Railroad	0-10	GIS Map	IOC, VOC, SOC, Microbes
	Snake River	0-10	GIS Map	IOC, VOC, SOC, Microbes

[1] LUST = leaking underground storage tank, UST = underground storage tank, SARA = Superfund Amendments and Reauthorization Act, AST = above ground storage tank
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Section 3. Susceptibility Analyses

The water system's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Attachment A contains the susceptibility analysis worksheet. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface, and a water depth of more than 300 feet protect the ground water from contamination.

The hydrologic sensitivity was low for the well (see Table 2). The poorly drained nature of the soil, the low permeability zones, and the nature of the vadose zone work to reduce the downward movement of contaminants.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in Sanitary Surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

The Del Rio Estates drinking water system consists of one well that extracts ground water for community uses. The well rated high susceptibility for system construction(Table 2). The 2001 Sanitary Survey stated that the well was protected from surface flooding. However, the Sanitary Survey also stated that the well was not sealed to prevent surface water entry.

The well is 300 feet deep and is constructed with 0.250-inch thick, 10-inch diameter casing placed to 236 feet below ground surface (bgs) into “gray cinders”. The well is sealed to a depth of 30 feet into sand, using puddling clay. The producing fractured basalt is found between 235 feet bgs and 293 feet bgs. The highest production zone is greater than 100 feet below static water level. Though the Del Rio Estates well may have met construction standards at the time of its installation, current well construction standards are stricter.

The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all Public Water Systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Some of the requirements include casing thickness, well tests, and depth and formation type that the surface seal must be installed into. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. Ten-inch diameter wells require a casing thickness of at least 0.365-inches. Well tests are required at the design pumping rate for 24 hours or until stabilized drawdown has continued for at least six hours when pumping at 1.5 times the design pumping rate. The Del Rio Estates well received an additional point in the system construction category because it does not meet current well construction standards, although they may have at time of construction.

Potential Contaminant Source and Land Use

The well rated high for IOCs (e.g., arsenic, nitrate), VOCs (e.g., petroleum products), and SOCs (e.g., pesticides), and moderate for microbial contaminants (e.g., bacteria)(Table 2). The large number of urban and agricultural potential contaminant sites, as well as the local transportation corridors and the irrigated agricultural land contributed most of points to the contaminant inventory rating. County level nitrogen fertilizer use, county level herbicide use, and total county level ag-chemical use are rated as high. In addition, the delineations fall within a nitrate priority area and an SOC priority area for the pesticide Atrazine.

Final Susceptibility Rating

An IOC detection above a drinking water standard MCL, any detection of a VOC or SOC, a source within 50 feet of the wellhead, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well, despite the land use of the area. This is because a pathway for contamination already exists. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time-of-travel zone (Zone 1B) and much agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, the well rated moderate for all categories.

Table 2. Summary of the Del Rio Estates Susceptibility Evaluation

	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
Source		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well	L	H	H	H	M	H	M	M	M	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Susceptibility Summary

In terms of total susceptibility, the well rated moderate for all categories. Multiple commercial and industrial potential contaminant sources, agricultural land uses, high county wide nitrogen fertilizer use, high county wide herbicide use, State Highway 81, the Eastern Idaho Railroad, and the Snake River contributed the most land use points to the susceptibility rating. The low hydrologic sensitivity score also contributed heavily to the overall scores.

The main IOC water chemistry issue recorded in the public water system is arsenic, though the recorded levels (4 to 9 parts per billion) are background readings. The new MCL listed by EPA is 10 ppb. Del Rio Estates would have to be mindful that they may have to install a treatment system by 2006. Total coliform bacteria have been detected in the distribution system in June 1993 and October 1998, but there has never been a repeat detection at the wellhead. No VOCs or SOCs were detected in the well.

County level nitrogen fertilizer use, county level herbicide use, and total county level ag-chemical use are rated as high for the area. In addition, the delineations fall within a nitrate priority area and an SOC priority area for the pesticide Atrazine.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For the Del Rio Estates, the source water protection activities should first focus on correcting deficiencies outlined in the Drinking Water Supply Report (DEQ, 1993). The Del Rio Estates should implement a disinfection system if microbial contamination becomes an issue. Any spills from the potential contaminant sources listed in Table 1 should be carefully monitored, as should any future development in the delineated areas. Practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the designated source water areas should be implemented. Most of the designated areas are outside the direct jurisdiction of the Del Rio Estates. Partnerships with state and local agencies and industry groups should be established and are critical to success.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan because the delineation shows areas of urban and agricultural land use. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the U.S. Environmental Protection Agency. Many transportation corridors transect the delineation. Therefore, the Department of Transportation should be included in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A community with a fully developed drinking water protection program will incorporate many strategies, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Twin Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

Assistance

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Twin Falls Regional DEQ Office	(208) 736-2190
State DEQ Office	(208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper (mlharper@idahoruralwater.com), Idaho Rural Water Association, at (208) 343-7001 for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

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Attachment A

Del Rio Estates Susceptibility Analysis Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : DEL RIO ESTATES Well# : WELL #1

Public Water System Number 5160014 09/24/2001 12:25:49 PM

1. System Construction			SCORE			
Drill Date	07/09/1977					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES		1993			
Well meets IDWR construction standards	NO		1			
Wellhead and surface seal maintained	NO		1			
Casing and annular seal extend to low permeability unit	NO		2			
Highest production 100 feet below static water level	YES		0			
Well located outside the 100 year flood plain	NO		1			
		Total System Construction Score	5			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	YES		0			
Vadose zone composed of gravel, fractured rock or unknown	NO		0			
Depth to first water > 300 feet	NO		1			
Aquitard present with > 50 feet cumulative thickness	YES		0			
		Total Hydrologic Score	1			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND		2	2	2	2
Farm chemical use high	YES		2	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO		NO	NO	NO	NO
		Total Potential Contaminant Source/Land Use Score - Zone 1A	4	2	4	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		4	5	5	3
(Score = # Sources X 2) 8 Points Maximum			8	8	8	6
Sources of Class II or III leacheable contaminants or	YES		7	4	3	
4 Points Maximum			4	4	3	
Zone 1B contains or intercepts a Group 1 Area	YES		2	0	2	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land		4	4	4	4
		Total Potential Contaminant Source / Land Use Score - Zone 1B	18	16	17	10
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES		2	2	2	
Sources of Class II or III leacheable contaminants or	YES		1	1	1	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land		2	2	2	
		Potential Contaminant Source / Land Use Score - Zone II	5	5	5	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES		1	1	1	
Sources of Class II or III leacheable contaminants or	YES		1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	YES		1	1	1	
		Total Potential Contaminant Source / Land Use Score - Zone III	3	3	3	0
Cumulative Potential Contaminant / Land Use Score			30	26	29	12
4. Final Susceptibility Source Score			12	11	12	10
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate